



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

MCH6604 — General-Purpose Switching Device Applications

Features

- Low ON-resistance
- Ultrahigh-speed switching
- 1.5V drive
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		50	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		0.25	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	1	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)1unit	0.8	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

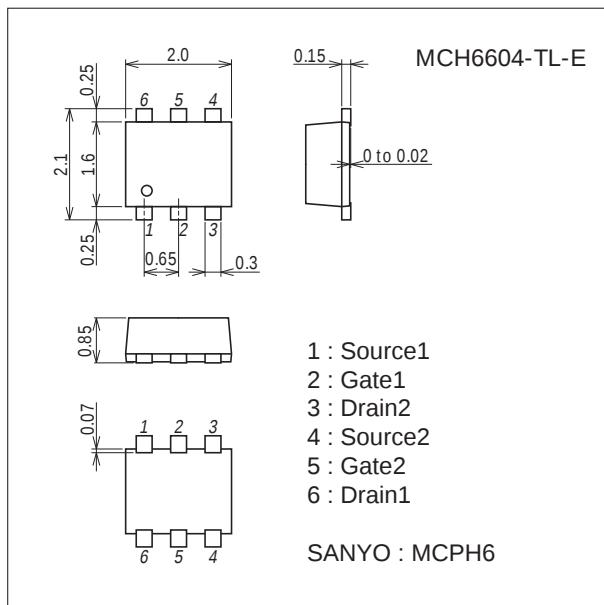
This product is designed to "ESD immunity < 200V**", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

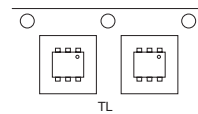
7022A-006



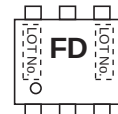
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

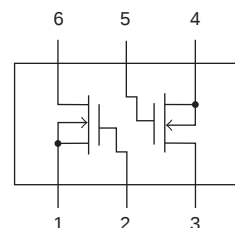
Packing Type : TL



Marking



Electrical Connection

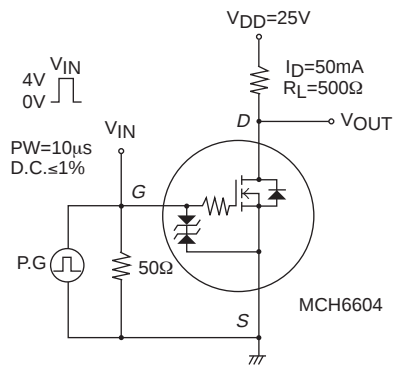


MCH6604

Electrical Characteristics at Ta=25°C

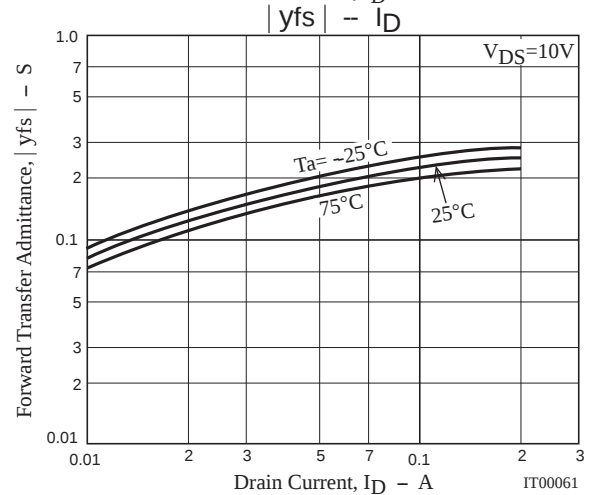
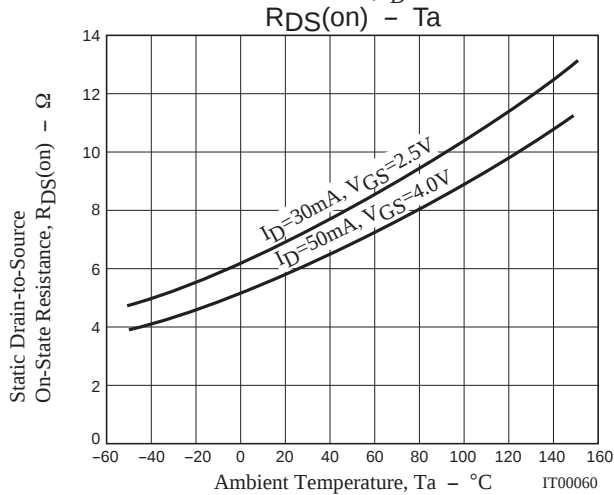
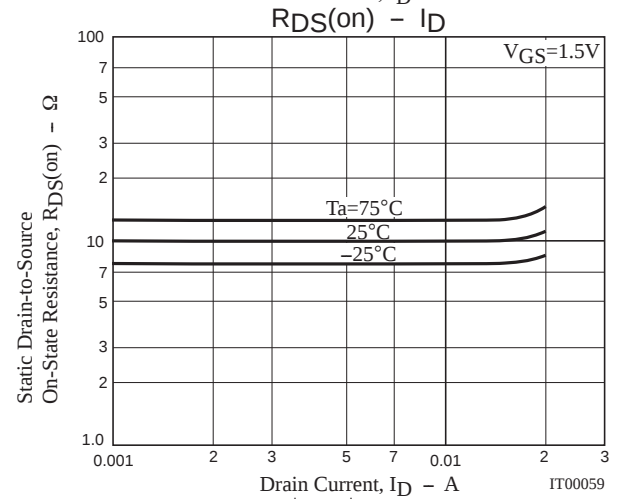
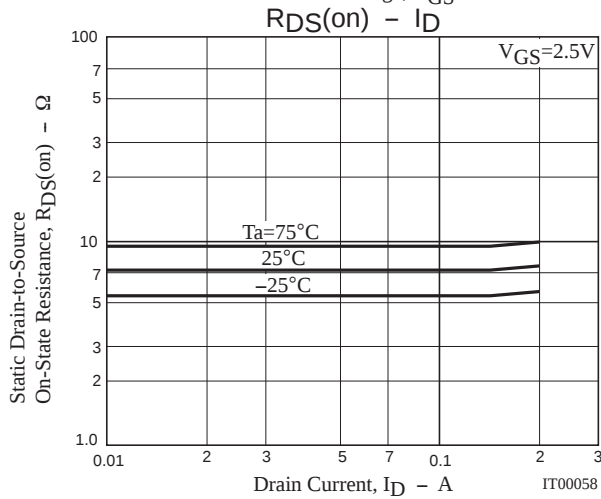
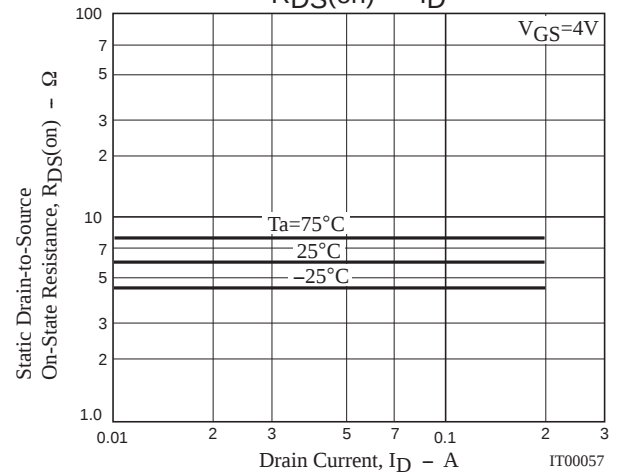
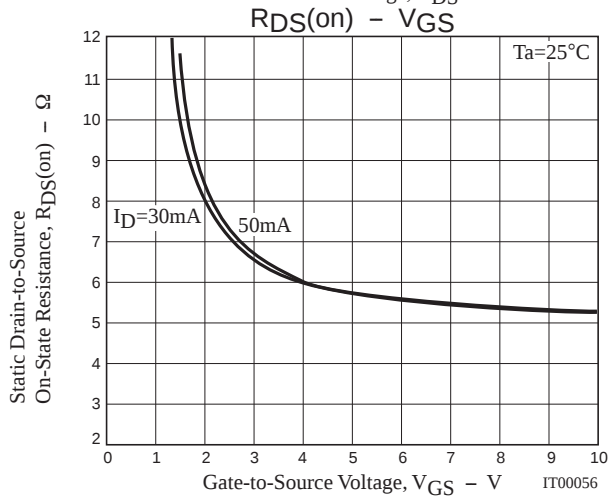
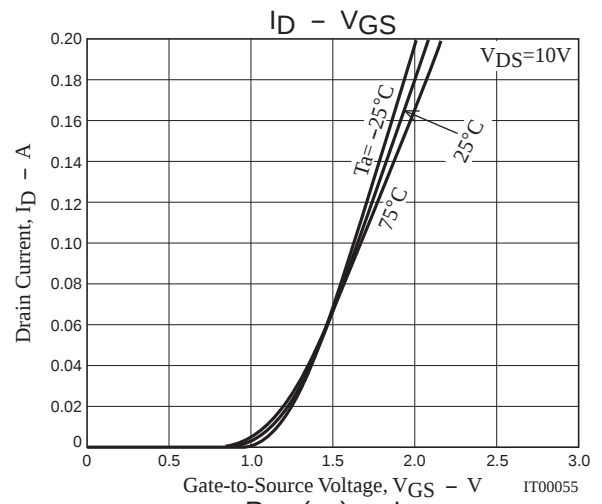
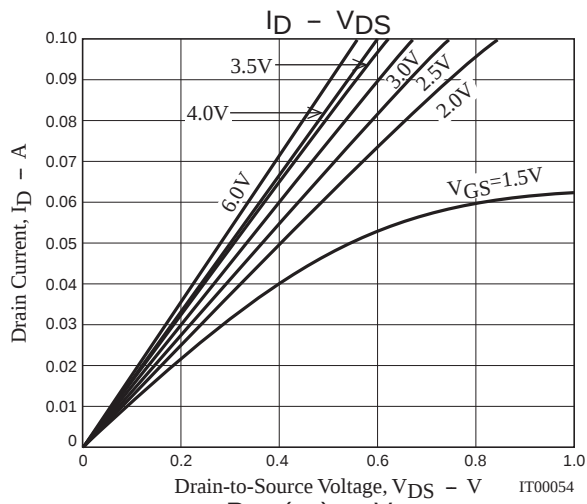
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	50			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=50V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=100\mu A$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=50mA$	130	180		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=50mA, V_{GS}=4V$		6	7.8	Ω
	$R_{DS(on)2}$	$I_D=30mA, V_{GS}=2.5V$		7.1	9.9	Ω
	$R_{DS(on)3}$	$I_D=10mA, V_{GS}=1.5V$		10	20	Ω
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		6.6		pF
Output Capacitance	C_{oss}			4.7		pF
Reverse Transfer Capacitance	C_{rss}			1.7		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		18		ns
Rise Time	t_r			42		ns
Turn-OFF Delay Time	$t_d(off)$			190		ns
Fall Time	t_f			105		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		1.57		nC
Gate-to-Source Charge	Q_{gs}			0.20		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.32		nC
Diode Forward Voltage	V_{SD}	$I_S=100mA, V_{GS}=0V$		0.85	1.2	V

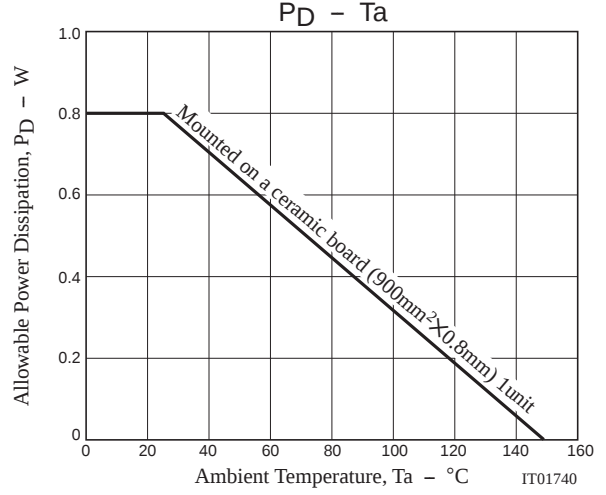
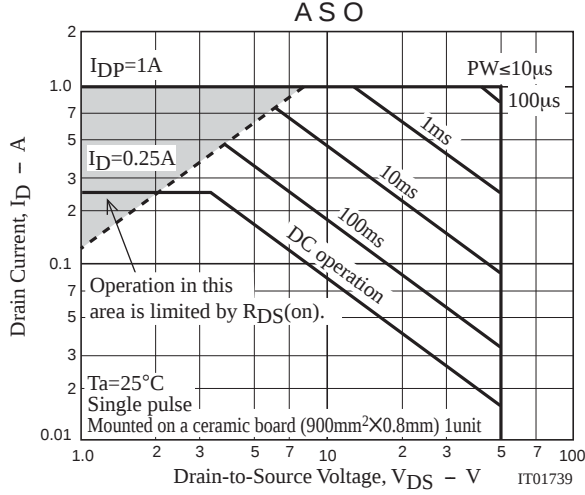
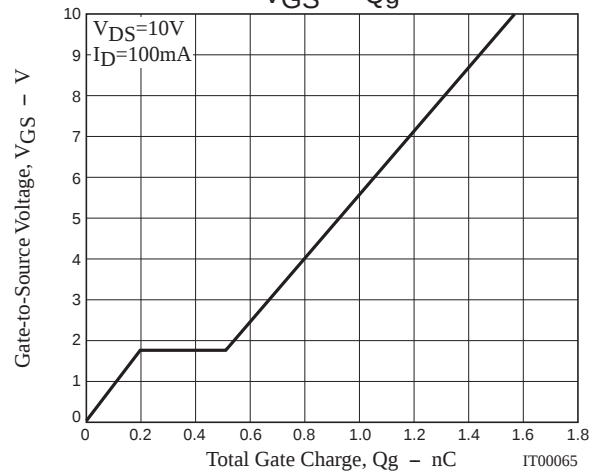
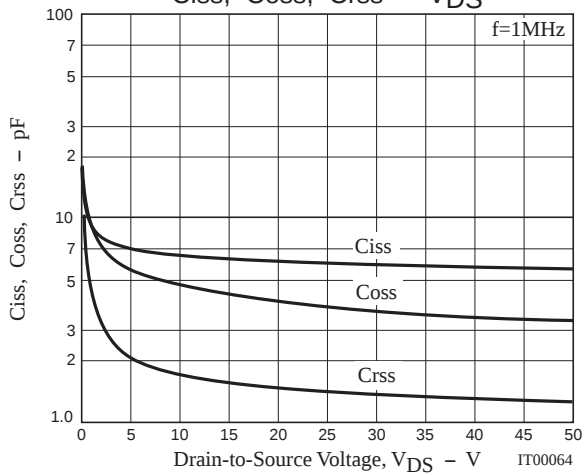
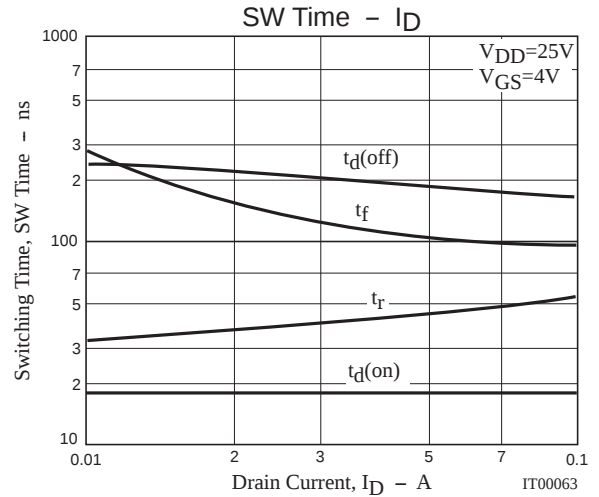
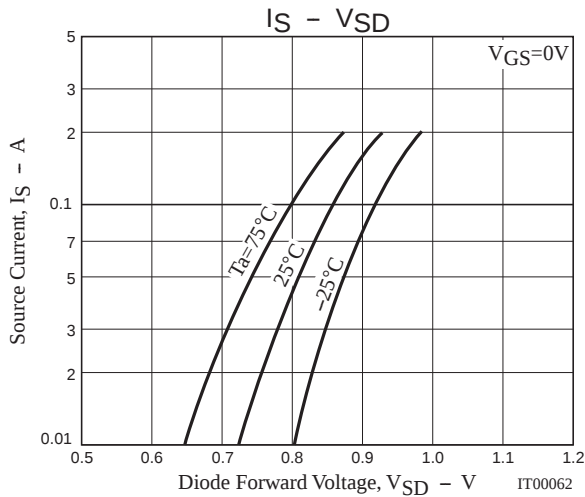
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH6604-TL-E	MCPH6	3,000pcs./reel	Pb Free





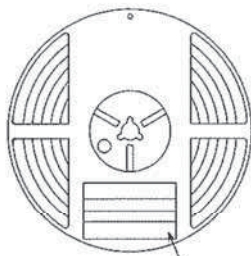
Taping Specification

MCH6604-TL-E

1. Packing Format

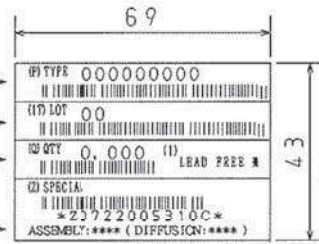
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
MCPH6	MCP4	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



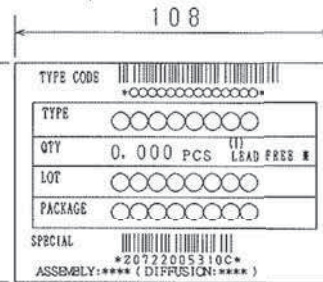
Reel label

Type No.
LOT No.
Quantity
Origin

Reel label, Inner box label
(unit:mm)

Outer box label

(It is a label at the time of factory shipments.
The form of a label may change in physical
distribution process.)



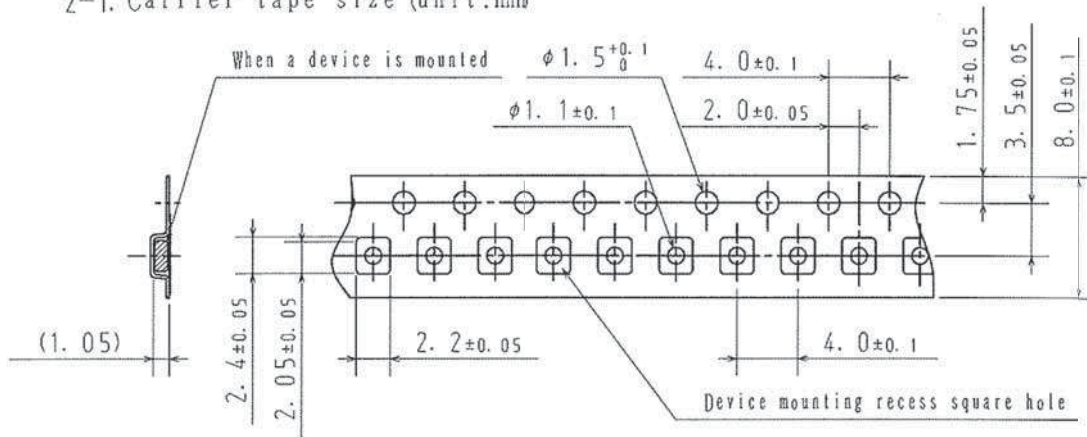
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

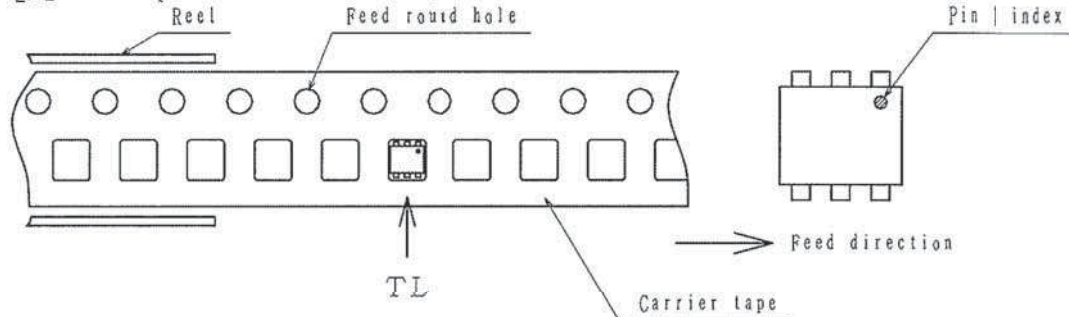
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



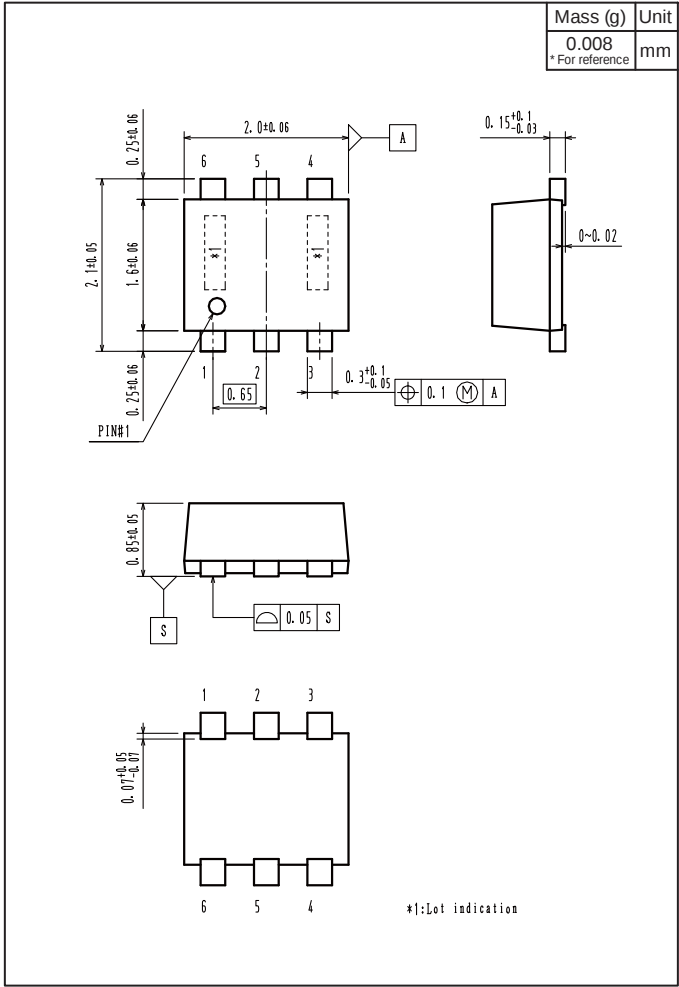
2-2. Device placement direction



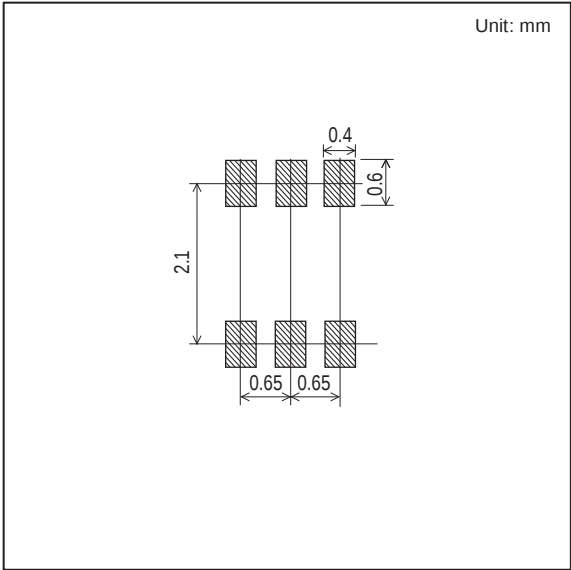
Those with pin 1 index on the feed hole side.....TL

MCH6604

Outline Drawing
MCH6604-TL-E



Land Pattern Example



Note on usage : Since the MCH6604 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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